Amendment to the Claims:

1. (Previously Presented)   A   communications   system comprising:

a plurality of mobile wireless units movably located within a defined space of a wireless local area network;

a plurality of fixed access points disposed at known locations in the defined space, each access point operating at a dedicated frequency different from the dedicated frequency of its nearest neighbor access points;

a means for tracking movement of at least one mobile unit within the defined space including:

a memory storing a map of the access points and relative signal strengths of signals from the access points at predefined locations in the defined space,

a means for scanning identified scanning frequencies of access points nearby a selected one of the mobile wireless units to measure actual signal strengths between the selected mobile unit and each of the nearby access points, and

a means for calculating a location of the selected mobile unit relative to the map by comparing the actual signal strengths with the map of relative signal strengths at predefined locations in the defined space;

a means for assigning the nearby access points with strongest signals at the calibrated location to the selected mobile unit based on the map of relative strengths in the defined space and communicating the dedicated frequencies of the nearby access points to the selected mobile unit;

wherein the tracking means tracks the movement of the selected mobile unit by periodically scanning the frequencies of the assigned access points adjacent the calculated location and predicts future locations of the selected mobile unit;

wherein the assigning means assigns the nearby access points based on the predicted location of the selected mobile unit and the map;

wherein the scanning means only scans the frequencies of the assigned nearby access points.

2-3. (Cancelled)

4. (Previously Presented)   The system as set forth in claim 1, wherein the position tracking means includes:

a velocity estimating means for determining speed and direction of movement of the selected mobile unit.

5. (Cancelled)

6. (Previously Presented)   The system as set forth in claim 1, further including:

a means for determining a degree of certainty of an accuracy of the calculated location.

7. (Previously Presented)   The system as set forth in claim 6, wherein the number of nearby access points assigned to the selected mobile unit is a function of location accuracy certainty and the tracking means tracks the movement of the at least one mobile unit by periodically scanning only the frequencies of the access points assigned to the selected mobile unit.

8. (Previously Presented)   The system as set forth in claim 1, further including a means for creating the map including:

a means for measuring a plurality of initial signal strengths at predefined locations within the defined space;

a means for mapping the initial signal strengths in relation to predefined locations in the defined space;

a means for identifying locations and scanning frequencies of the access points in the defined space; and

a means for creating the map and loading in the memory.

9. (Currently Amended)   In a wireless local area network, a method comprising:

tracking movement of a selected mobile device within a defined space using wireless access points, each access point having a dedicated frequency different from the dedicated frequency of nearby access points, the tracking including:

(a) measuring actual signal strengths at the dedicated frequencies of only a ~~current plurality~~ designated subset of the access points neighboring ~~the last~~ a calculated location of the selected mobile device, [[and]]

(b) calculating ~~a current~~ an updated location of the mobile device by comparing the measured actual signal strengths with a predefined map of relative signal strengths at predefined locations in the defined space[[;]].

(c) based on the predefined map and the calculated ~~current~~ updated location, identifying from the predefined map an updated ~~current plurality~~ designated subset of the access points neighboring the ~~current~~ updated calculated location with the strongest signals at the ~~current~~ updated calculated location, and

(d) periodically repeating steps (a)-(c) such that the mobile unit only scans the dedicated frequencies of the updated designated subset to determine its location;

~~assigning the updated current plurality of the access points with strongest signals to the selected mobile device;~~

performing wireless communication with the selected mobile device using a communication access point selected from the access points of the updated designated subset; and

handing off the selected mobile device from one communication access point to another communication access point based on the predefined map and the updated calculated ~~current~~ location.

10. (Cancelled)

11. (Currently Amended) The method as set forth in ~~claim 10~~ claim 9, wherein the measuring comprises:

~~periodically measuring the dedicated frequencies of the current plurality of the access points neighboring the last calculated location of the selected mobile device~~ wherein said ~~current plurality~~ updated designated subset of the access points consists of three of the access points nearest the [[last]] updated calculated location.

12. (Cancelled)

13. (Currently Amended) The method as set forth in claim 9, further including:

estimating a speed and a direction of movement of the selected mobile device based on the tracking including at least the updated calculated ~~current~~ location and ~~the last~~ one or more prior calculated locations; and

predicting a future location of the selected mobile device from the estimated speed and direction;

wherein the ~~handing-off~~ updated designated subset is based on the predicted future location and the map.

14. (Previously Presented) The method as set forth in claim 9, further including, before tracking movement, generating the map by: .

measuring a plurality of initial signal strengths at a plurality of measurement locations within a defined space;

mapping the initial signal strengths in relation to the plurality of measurement locations in the defined space;

identifying a plurality of locations and scanning frequencies of the access points located in the defined space; and

combining the signal strengths at the plurality of measurement locations and the access point locations and the frequency assigned to each access point into the map.

15. (Currently Amended)   The method as set forth in claim 14, further including:

determining a certainty of an accuracy of the <u>updated</u> calculated location of the mobile device.

16-20. (Cancelled)

21. (Currently Amended)   The method as set forth in claim 15, wherein a ~~number of the current plurality of the access points assigned to the selected mobile device~~ <u>size of the updated designated subset of the access points</u> is a variable based on the determined certainty of the location calculation accuracy.

22-23. (Cancelled)

24. (Currently Amended)   A   communications   system comprising:

~~a mobile wireless unit located within a defined space of a wireless local area network;~~

a plurality of access points disposed at known locations in [[the]] <u>a</u> defined space, each access point operating at a dedicated ~~frequency~~ <u>one of a plurlaity of frequencies</u>;

<u>a mobile wireless unit movably located within the defined speace, the mobile wireless unit including a memory which stores frequencies of a designated subset of the plurality of frequencies</u>;

a computer processor ~~for tracking~~ <u>which tracks</u> movement of the mobile wireless unit and reassigning <u>the stored</u> frequencies of ~~closest access points to the mobile wireless unit~~ <u>the designated subset,</u> the computer processor being programmed to perform the steps of:

measuring actual signal strengths at the ~~dedicated~~
frequencies of ~~an identified plurality of nearby access points between~~
~~the mobile wireless unit and the identified nearby access points~~ only
the stored designated subset of the plurality of frequencies,

20   calculating a location of the mobile wireless unit by
comparing the actual signal strengths with a predefined map of relative
signal strengths at predefined locations in the defined space;

                     repeating the measuring and calculating step to update
the calculated location periodically;

25   updating the ~~identification of nearby access points with~~
~~strongest signals to the mobile wireless unit~~ stored designated subset of
the plurality of frequencies based on the updated calculated location
and the map;

                     providing wireless communication service to the mobile
30   wireless unit via a selected communication access point; and

                     handing off the mobile wireless unit from one selected
communication access point to another selected communication access
point based on the calculated location and the map.

            25. (Previously Presented)   The communication system as set
forth in claim 24, further including:

            a memory in which the map is stored and wherein the map depicts a
location of each access point in defined space and relative signal strengths of signals
5   from each of the access points at a multiplicity locations in the defined space.

            26. (Previously Presented)   The communication system as set
forth in claim 24, wherein the map is a predefined map generated by :

            measuring a plurality of initial signal strengths at a plurality of
measurement locations within a defined space;

5   mapping the initial signal strengths in relation to the plurality of
measurement locations in the defined space;

identifying a plurality of locations and scanning frequencies of the access points located in the defined space; and

combining the signal strengths at the plurality of measurement
10   locations and the access point locations and the frequency assigned to each access point into the map.

27. (Previously Presented)   A method comprising:

communicating with a mobile device using a communication access point selected from the access points of a wireless local area network;

tracking movement of the mobile device within a defined space
5   covered by the local area network by periodically (i) measuring signal strengths between the mobile device and access points of the wireless local area network and (ii) determining a location of the mobile device in the defined space based on the measured signal strengths and a predefined map of relative signal strengths at predefined locations in the defined space; and
10   handing off the mobile device from one selected communication access point to another selected communication access point based on the predefined map and the determined location of the mobile device.

28. (Currently Amended)   The method as set forth in claim 27, wherein the measuring operation (i) comprises:

measuring signal strengths between the mobile device and a selected subset of the access points of the wireless local area network and further including:
5   as the mobile device moves relative to the access points, updating the selected subset as the determined location is updated.

29. (Previously Presented)   The method as set forth in claim 28, wherein the selected subset of access points of the wireless local area network consists of three access points of the wireless local area network.

30. (Previously Presented)   The method as set forth in claim 27, wherein:

the tracking further comprises predicting a future location of the mobile unit based on the periodically performed operations (i) and (ii); and

the handing off of the mobile device is based on the predicted future location of the mobile device.

31. (New)   The communication system as set forth in claim 24, wherein updating the stored designated subset of the plurality of frequencies includes:

from the calculated location and one or more previous locations, projecting a future location of the mobile device; and

updating the stored designated subset with the frequencies of the access points nearest to the projected future location.

32. (New)   The communication system as set forth in claim 24, wherein the computer processor is further programmed to:

determine a certainty of the accuracy of the calculated location;

adjusting a number of frequencies in the designated subset in accordance with the determined certainty of accuracy.